TITTLE DEVELOPING MODLES OF RESIDENTIAL AND PARA-OCCUPATIONAL EXPOSURE TO PESTICIDES FOR AGRICULTURAL FAMILIES

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Background and Aims: CAREX Canada is a national occupational and environmental surveillance project estimating the number of Canadian exposed to carcinogens. Agricultural pesticide estimates are being developing to calculate cancer risks across the country. To facilitate these risk assessments, we examined the state of the literature on residential and para-

occupational exposure and its implications for pesticide risk assessment.

Methods: A search was undertaken in the published literature for data on exposures in farm homes as well for spouses and children of farmers and farmworkers, including exposure assessments and epidemiologic studies. Papers were limited to research from North America. Environmental and biological sampling and epidemiological data from these studies (n=42) were critically examined and catalogued in a matrix.

Results: Para-occupational and residential pesticide exposures are clearly documented in North America. The studies showed increased exposures for farm children compared to non-farm children. A smaller increase was seen in some studies of farm spouses. Major sources of exposure included workers' boots, clothes and vehicles. Children who were present during spraying showed even higher levels of exposure. Proximity of the home to spraying locations explained some, but not all, of the home exposure reported. Epidemiologic studies showed higher rates and risks of cancer and decreased neurobehavioral performance in children whose parents had occupational exposure to pesticides.

We propose the need for a stratified farm community risk assessment model, with low (farm spouse), medium (children not present for spraying) and high (children present for spraying) exposure categories.

Conclusions: (Arial, 8pt, bold) text (Arial, 8pt) dummy text, dumm

Pope III CA, Ezzati M, and Dockery DW. Fine-Particulate Air Pollution and Life Expectancy in the United States. N Engl J Med 2009;360:376-86.